



CF/40-0-1 CALIFORNIA WATER PLAN (ID 784)

December 9, 2013

Sent via email cwpcwm@water.ca.gov

California Department of Water Resources
Attn: Paul Massera
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RE: SCWA Comments on Draft California Water Plan

Thank you for the opportunity to comment on the 2013 update to the California Water Plan. The Sonoma County Water Agency (SCWA) was created as a special district in 1949 by the California Legislature to provide flood protection and water supply services in Sonoma County. In 1995, the treatment and disposal of wastewater were added to SCWA's responsibilities. Because SCWA is a countywide agency, its operations fall within both the North Coast and San Francisco Bay hydrologic regions. Therefore, SCWA staff provides comments on both the North Coast and San Francisco Bay Regional Reports. To provide context to our specific comments, we first present a general overview of SCWA's operations in these watersheds as well as relevant historical information. As requested, our comments focus on content with an emphasis on ensuring that information regarding SCWA is complete and accurate.

BACKGROUND/GENERAL COMMENTS

Russian River Watershed and the Russian River Project

1 The Russian River watershed drains an area of 1,485 square miles that includes much of Sonoma and Mendocino counties. The headwaters of the Russian River are located in central Mendocino County, approximately 15 miles north of Ukiah. The Russian River is approximately 110 miles in length and flows generally southward to Mirabel Park, where it changes course and flows westward to the discharge point at the Pacific Ocean near Jenner, approximately 20 miles west of Santa Rosa.

Two federal projects impound water in the Russian River watershed: the Coyote Valley Dam on the Russian River east of the city of Ukiah in Mendocino County (forming Lake Mendocino), and the Warm Springs Dam on Dry Creek (a tributary of the Russian River) northwest of the City of Healdsburg in Sonoma County (forming Lake Sonoma). Because SCWA was the local sponsor for the dams and partially financed their construction, SCWA has the right to control releases from the water supply pools of both reservoirs. Lake Sonoma and Lake Mendocino and their associated facilities, collectively referred to as the Russian River Project, are operated in accordance with criteria established by the State Water Resources Control Board's Decision 1610, which established the most recent minimum instream flow requirements for Dry Creek and the Russian River. Flood management releases from both reservoirs are controlled by the United States Army Corps of Engineers (USACE).

The Water Agency makes no diversions from the Russian River between Lake Mendocino and the Russian River's confluence with Dry Creek, but does authorize diversions by others under SCWA water right permits. In addition, numerous domestic, agricultural and municipal diversions occur on that portion of the Russian River and SCWA maintains minimum instream flows regardless of the extent of diversions by others.

PG&E's Potter Valley Project

2

In several places the North Coast Regional Report combines PG&E's Potter Valley Project (PVP) with the USACE Russian River Project and does not contain up-to-date information about PVP diversions. We provide a general updated description and, in another section of this letter, specific comments to clarify that these are separate projects. We are uncertain why the level of detail for prior PVP proceedings is included and not, for example, a similar level of detail for the proceedings leading up to the SWRCB's Decision 1610 or the 2008 Russian River Biological Opinion. We would be happy to provide detailed information regarding these proceedings if requested.

PG&E's PVP imports water from the Eel River into the Russian River watershed. The PVP, originally constructed in 1908, includes a tunnel to divert water from the Eel River into the Russian River watershed. Water is stored in Lake Pillsbury on the Eel River (constructed for the PVP in 1922), then released and re-diverted 12 miles downstream at Cape Horn Dam through a diversion tunnel to the Potter Valley powerhouse in the Russian River watershed. The water is discharged from the powerhouse into a canal from which the Potter Valley Irrigation District diverts water. Water then flows into the East Fork of the Russian River and downstream to Lake Mendocino. PVP diversions are regulated by a license issued to PG&E by the Federal Energy Regulatory Commission and serve multiple purposes, including power generation, Potter Valley agricultural irrigation, and minimum instream flow requirements in the East Fork of the Russian River.

This diversion has been ongoing for more than 100 years, and extensive agricultural, municipal, recreation and commercial economies have developed during those 100 years in Mendocino and Sonoma counties in reliance upon the PVP diversions. It is important to note, however, that over time diversions have decreased. As part of PG&E's most recent FERC license amendment proceeding, the National Marine Fisheries Service (NMFS) issued and the FERC decision implemented a Biological Opinion for the PVP. Between 1922 and 1983, PVP diversions averaged 154,000 acre-feet per year. Between 1983 and 2006, diversions averaged approximately 131,000 acre-feet per year. In 2006, however, PG&E concluded that its amended FERC license did not authorize that level of diversions and between 2007 and 2013 diversions have averaged 70,000 acre-feet per year.

In addition, salmonid species within the Russian River watershed listed as threatened and endangered under the Endangered Species Act (ESA) depend on these continued diversions (see below regarding the Russian River Biological Opinion). Given the importance of the PVP diversions to the agricultural, commercial, recreation and industrial economy in Mendocino and Sonoma counties, as well as the importance of a sufficient water supply in Lake Mendocino to the threatened Chinook salmon and steelhead in the Russian River watershed, SCWA anticipates that FERC will issue a new license to continue the current level of diversions after 2022 when the existing license term expires.

SCWA's Transmission System

- 3 The draft North Coast Regional Report only describes the Petaluma and North Marin aqueducts, rather than SCWA's transmission system, providing an incomplete picture. We have, therefore, provided a general description and, in another section, specific comments to more accurately describe SCWA's transmission system.

SCWA diverts water from the Russian River near Forestville and conveys the water via its transmission system (including diversion facilities, treatment facilities, aqueducts, pipelines, water storage tanks, and booster pump stations) to its water contractors. SCWA's transmission system extends from its Russian River diversion facilities located near Forestville to the Santa Rosa, Petaluma, and Sonoma valleys. The transmission system consists of over 85 miles of pipelines. The major pipelines that comprise the system are known as the Santa Rosa Aqueduct, the Sonoma Aqueduct, the Petaluma Aqueduct, and the Russian River to Cotati Intertie. SCWA also owns the northern portion of the North Marin Aqueduct that extends from the terminus of the Petaluma Aqueduct to a booster station located near the border of Marin County with Sonoma County. The remainder of the North Marin Aqueduct is owned and maintained by the North Marin Water District, which transfers water to its service area and to Marin Municipal Water District.

More information on SCWA's water supply operations can be found in SCWA's 2010 Urban Water Management Plan available at: <http://www.scwa.ca.gov/files/docs/FINAL%202010%20UWMP.pdf>. In addition, the attached map shows the Russian River watershed and SCWA's transmission system which operates in both the North Coast and San Francisco Bay regions.

Groundwater Resources and Management

- 4 Both the North Coast and San Francisco Bay Region Reports did not accurately describe SCWA's groundwater management activities. A general description of the importance of groundwater in Sonoma County is provided below and specific comments to address inaccuracies are contained in a separate section. SCWA staff is particularly concerned about the accuracy of included water balance figures but cannot provide comments or corrections. The draft reports do not include a description of the methodology or assumptions from which the water balance figures were derived. Appendices 4 and 5, which will apparently explain the assumptions, will not be available until after the Plans have been finalized.

In addition to surface water, groundwater is an important source of water in Sonoma County because it provides the domestic water supply for most of the unincorporated portion of the County, and is a primary source of water for agricultural uses. Groundwater, extracted from three SCWA wells located along the Russian River-Cotati Intertie Pipeline in the Santa Rosa Plain, also provides a portion of SCWA's water supply. Most of SCWA's customers also have their own local groundwater supplies.

There are four main groundwater basins in Sonoma County: Sonoma Valley (a subbasin of the Napa- Sonoma Valley Basin (DWR number 2-2), Alexander Valley (DWR number 1-54), Santa Rosa Valley (DWR number 1-55), and Petaluma Valley (DWR number 2-1). The Sonoma Valley and Petaluma Valley basins are located in the San Francisco Bay Hydrologic Region; Alexander Valley and Santa Rosa Valley are located in the North Coast Hydrologic Region. SCWA has groundwater supply wells only in the Santa Rosa Plain Subbasin of the Santa Rosa Valley Basin. Several of the Water Agency's contractors and customers have their own local groundwater supplies in the Santa Rosa Plain, Sonoma Valley and Petaluma Valley groundwater basins.

SCWA has developed and implemented a program (Groundwater Basin Assessment and Management Program) intended to enhance the current knowledge of groundwater resources within Sonoma County. The program's approach is to conduct a scientific basin-wide study of the four largest and most heavily populated groundwater basins in Sonoma County (Alexander Valley, Petaluma Valley, Santa Rosa Plain and Sonoma Valley) to provide a basis for subsequent groundwater management planning activities which emphasize local and regional coordination and collaboration (when basin stakeholders and SCWA's Board support development of a management planning process). To implement the groundwater characterization program, SCWA staff worked with scientists from the U.S. Geological Survey (USGS) to develop a cooperative technical study program to evaluate groundwater resources in the Alexander Valley, Santa Rosa Plain, and Sonoma Valley groundwater basins. The Sonoma Valley and Alexander Valley groundwater studies were completed in 2006; the Santa Rosa Plain study was completed in 2013.

SCWA has taken the lead in local groundwater management planning efforts. In 2007, following the completion of the USGS study and extensive stakeholder engagement, SCWA along with the City of Sonoma, Valley of the Moon Water District, and the Sonoma Valley County Sanitation District, adopted the Sonoma Valley Groundwater Management Plan under Groundwater Management Act (Assembly Bill 3030; as amended by Senate Bill 1938). This plan identifies a range of voluntary water management actions to sustain resources for future generations, including enhancing groundwater recharge and increasing water conservation and recycled water use. In the Santa Rosa Plain, a stakeholder Basin Advisory Panel began meeting in December 2011 and is expected to complete development of a groundwater management plan in mid-2014. The goals of these groundwater management plans are to locally manage, protect, and enhance groundwater resources for all beneficial uses, in a sustainable, environmentally sound, economical, and equitable manner for generations to come.

In addition, under the California Statewide Groundwater Elevation Monitoring (CASGEM) Program, SCWA acts as the monitoring entity for itself and on behalf of the County of Sonoma in 13 of the 14 basins and sub-basins in Sonoma County.

Detailed information on Sonoma County basins and related groundwater studies, planning and management can be found in SCWA's 2010 Urban Water Management Plan available at:

<http://www.scwa.ca.gov/files/docs/FINAL%202010%20UWMP.pdf> and also at:

<http://www.scwa.ca.gov/groundwater/>

Russian River Biological Opinion

- 5 The draft North Coast Region Report does not mention the Russian River Biological Opinion. Because the Russian River Biological Opinion affects instream flows, estuary management, and habitat enhancement and restoration, it is important to include at least a brief overview of the Russian River Biological Opinion in the North Coast Region Report. Such an overview is below and specific suggestions are also provided in a separate section.

Two salmonid species inhabiting the Russian River watershed (Chinook salmon and steelhead) have been listed as "threatened" under the federal Endangered Species Act (ESA), and one species – Coho salmon – has been listed as "endangered" under the federal ESA and under the California ESA. Because SCWA's water supply facilities and operations have the potential to adversely affect the three listed species, NMFS issued

what is commonly referred to as the Russian River Biological Opinion on September 24, 2008.¹ The Russian River Biological Opinion is in effect until September 2023 and it is anticipated that SCWA will engage in a new Section 7 consultation with NMFS and the USACE and that a new biological opinion will be issued prior to the expiration of the existing one.

In particular, the Russian River Biological Opinion concluded that artificially high summertime flows in the Russian River and Dry Creek make it difficult for juvenile steelhead and coho to grow and thrive and that the practice of “breaching” the sandbar at the Russian River estuary negatively affects the estuary’s habitat for young steelhead by allowing more saltwater than is natural to flow into it and by keeping the amount of freshwater artificially low. As a result of these findings, the Russian River Biological Opinion requires SCWA and the USACE to implement a series of actions to modify existing water supply and flood control activities that, in concert with habitat enhancement, are intended to minimize impacts to listed salmon species and enhance their habitats within the Russian River and its tributaries. Among other things, the Russian River Biological Opinion requires SCWA to: adaptively manage the Russian River estuary with the goal of maintaining a freshwater lagoon in which young steelhead can grow; petition the State Water Resources Control Board to modify (by lowering) minimum instream flows in the Russian River and Dry Creek; and habitat enhancement and restoration to provide hiding places and refuge along six miles Dry Creek for young Coho salmon and steelhead trout.

The Estuary Management Project was approved in August 2011 and is being implemented. In September 2009, SCWA filed a petition with the SWRCB asking for changes to Decision 1610 and is preparing an Environmental Impact Report required by the California Environmental Quality Act. Because the process to permanently change minimum instream flows could take several years, the Russian River Biological Opinion requires that SCWA annually petition the SWRCB for interim changes to lower the flows required by Decision 1610, and SCWA has annually filed the required temporary urgency change petitions since 2010. Finally, with respect to Dry Creek habitat enhancement, the first mile of enhancements, which includes logs, boulder and thousands of native plants, is currently underway and must be complete by 2014. The second and third miles of habitat enhancement must be complete by 2017, with the final three miles constructed by 2023.

More information regarding the Russian River Biological Opinion, including relevant documents and implementation status, can be found at: <http://www.scwa.ca.gov/rrifr/>

SPECIFIC COMMENTS

North Coast Hydrologic Region Report

- 6 Page NC-8, line 24-31: References to the history of the PVP and uses of water from the PVP are provided in the general PVP comments, above.

¹ Biological Opinion for Water Supply, Flood Control Operations, and Channel Maintenance conducted by the U.S. Army Corps of Engineers, the Sonoma County Water Agency, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River Watershed, September 24, 2008 (Russian River Biological Opinion). The California Department of Fish and Game issued a consistency determination on November 9, 2009, finding that the NMFS Russian River Biological Opinion was consistent with the requirements of the California ESA and adopting the measures identified in the Russian River Biological Opinion. A Biological Assessment, consisting of a number of interim reports, was prepared over a period of years and numerous public meetings were held as part of the development of the Biological Opinion.

- 7 Page NC-12, line 15: We propose the following edits to clarify the difference between drinking water supplied by the Russian River watershed overall versus by SCWA, as well as other Russian River water users:

The reservoirs that provide flood protection and water supply storage include Lake Sonoma (Warm Springs Dam) located at the confluence of Warm Springs Creek and Dry Creek west of Healdsburg and Lake Mendocino (Coyote Valley Dam) on the East Fork Russian River near Ukiah. Lake Sonoma and Lake Mendocino and their associated facilities are collectively referred to as the Russian River Project. A diversion from the Eel River via the Pacific Gas & Electric's Potter Valley Project (Van Arsdale Reservoir, Cape Horn Dam) for the purpose of power production provides considerable benefit to the overall water storage in Lake Mendocino. The Sonoma County Water Agency (SCWA) diverts water from the Russian River near Forestville in Sonoma County and conveys the water via its transmission system to its water contractors who supply drinking water to over 600,000 people. The Russian River watershed also supplies drinking water for ~~over 570,000 people~~ to residents in Mendocino County and in Sonoma County.

The Russian River watershed is primarily an agricultural area with the greatest emphasis on vineyard and orchard crops. Water is diverted from the Russian River and its tributaries in both Mendocino and Sonoma counties for extensive agricultural and domestic purposes. Major orchard crops include prunes, pears, and apples; other crops such as cherries and walnuts are also produced. Besides agriculture, there is a growing trend toward light industry and commercial development and a significant telecommunications industry within the region. The production and processing of timber, agricultural and animal products, gravel removal and processing, energy production and miscellaneous light manufacturing operations are additional industrial activities in the watershed. The Russian River watershed also has developed an international reputation for the production of premium wines, contributing to a strong tourism industry within the region.

- 8 Page NC-13, line 37-40 and Page NC-14, line 1-10: We suggest the following edits for completeness and accuracy as shown. Additionally, we cannot confirm the accuracy of the U. S. Geological Survey reference.

The Sonoma Volcanics, a thick sequence of lava flows present along the eastern boundary of the basin, produce variable amounts of water. The Petaluma Formation also produces variable amounts of water but underlies much of the groundwater basin at depth and is important in terms of its extensive subsurface distribution and the number of wells producing from it. The Glen Ellen Formation consists of continental deposits of partially cemented gravel, sand, silt, and clay, and yields modest amounts of water to smaller groundwater wells. Groundwater within the Santa Rosa Plain Subbasin is generally present under unconfined conditions, except locally in the vicinity of clay or silt horizons where conditions may be semi-confined or confined (Sonoma County Water Agency, Groundwater Level monitoring Plan for CASGEM, December 2011).

The Wilson Grove Formation Highlands Groundwater Basin covers approximately ~~80,000~~ 65,000 acres and is located in southwestern Sonoma County and northwestern Marin County. The primary groundwater-bearing formation is the marine sedimentary deposits of the Wilson Grove Formation. This formation consists of fine-grained sandstone with lenses of conglomerate and shale. The formation underlies most of the basin and ranges from 300 to 2,000 feet in thickness. It is moderately permeable due to its high porosity and moderate transmissivity. Well production data for the area is very limited (U. S. Geological Survey 2004); SCWA estimates that 2,370 water wells have been constructed in the basin within the last 30 years (Sonoma County Water Agency, Groundwater Level Monitoring Plan for CASGEM, December 2011).

The Alexander Valley Groundwater Basin occupies approximately 31,000 acres that are drained by the Russian River within a structural controlled valley in northern Sonoma County. The Alexander Valley Groundwater Basin includes both the Cloverdale Area Subbasin in the north and the Alexander Area Subbasin in the south, which are hydraulically connected through thin deposits of alluvial materials beneath the Russian River (Metzger et al., USGS, 2006). Primary water-bearing units include the Quaternary alluvial deposits, Glen Ellen Formation, and the Sonoma Volcanics. Groundwater recharge within the Basin primarily originates from the infiltration of precipitation and seepage from the Russian River and its tributaries (Metzger et al, USGS, 2006). Based on an evaluation of streamflow data and estimates of evapotranspiration, the USGS estimated that between 5,000 to 25,000 afy of groundwater recharge occurs within the Alexander Valley Groundwater Basin noting, however, that there is a large degree of uncertainty associated with this estimate (Metzger et al, USGS, 2006). The USGS also estimated total water use for 1999 in the Alexander Valley to be approximately 15,800 af (comprising approximately 13,500 af of agricultural use and 2,300 af of municipal/industrial use) and noted groundwater represents the main source of this water supply.

- 9 Page NC 17, line 7-8: We suggest the following edit for completeness and accuracy as shown.

Although there are a higher percentage of domestic wells and lower percentage of irrigation wells, point to the more rural domestic setting and low use of groundwater for irrigation in the region, irrigation wells are typically higher capacity than domestic wells. In Sonoma County, for example, agricultural irrigation is the largest use of groundwater in many basins, although there are more individual domestic wells than irrigation wells.

- 10 Page NC-19, line 7-16, and Table NC-4 and Figure NC-8: SCWA is the designated monitoring entity for the Sonoma Valley and Kenwood Valley basins. In addition, SCWA acts as the monitoring entity on behalf of the County of Sonoma for the following basins and sub-basins: Annapolis Ohlson Ranch Formation Highlands Groundwater Basin, Bodega Bay Area Groundwater Basin, Fort Ross Terrace Deposits Groundwater Basin, Knights Valley Groundwater Basin, the Wilson Grove Formation Highlands Groundwater Basin, Alexander Area Groundwater Sub-basin, Cloverdale Area Groundwater Sub-basin, Healdsburg Area Groundwater Sub-basin, Lower Russian Groundwater Basin, Rincon Valley Groundwater Sub-basin, and Santa Rosa Plain Groundwater Sub-basin.
- 11 Page NC-24, line 37 through page NC-25, line 12; Figures NC-10 and NC-11: Because these figures were not provided and there is no reference for the source of the population projections in the text, SCWA staff cannot confirm if these figures or the text are accurate.
- 12 Page NC-30, line 20: It should be noted that adoption of the 2010 Policy for Maintaining Instream Flows in Northern California Coastal Streams was vacated. A hearing for adoption of the revised policy was held by the SWRCB on October 22, 2013. For more information, see: http://www.waterboards.ca.gov/waterrights/water_issues/programs/instream_flows/

- 13 Page NC-30, line 27 through Page NC-31, line 11: We recommend the following edit to clarify that the Potter Valley Project is not part of the Russian River Project (they are separate projects) and to more accurately describe the projects:

Water Supplies

Many of the smaller communities and rural areas in the North Coast region are supplied by small local surface water and groundwater systems. Larger water supply projects in this region include USBR's Klamath Project, the USACE Russian River Project (~~Potter Valley Project including~~ Lake Mendocino and Lake Sonoma), and the Humboldt Bay Municipal Water District's Ruth Reservoir, which serves coastal communities from Eureka to McKinleyville. Because the Upper Klamath River watershed is in both California and Oregon, the federal Klamath Project includes water supply facilities in both states. Facilities within the California portion include Clear Lake Reservoir for water supply, Tule Lake and Lower Klamath Lake as waterfowl refuges, and Iron Gate Reservoir as a hydroelectric facility of Pacific Power and Light Company. The primary water supply facilities on the Oregon side are Gerber Reservoir and Upper Klamath Lake. The Klamath Project is the largest agricultural irrigation project in the region and supplies water to about 240,000 acres, of which 62 percent is in Oregon and percent is in California. To maintain adequate instream fishery flows for the lower Klamath River, water releases must be coordinated among the various reservoirs operated by different agencies within both states.

Two of the largest water supply reservoirs in the North Coast region are USBR's 2.437-maf Trinity Lake on the Trinity River and the USACE 380,000 acre-foot Lake Sonoma in the Russian River watershed. These facilities provide water for instream flows, recreation, hydropower, and water supply purposes. Water from Trinity Lake is exported from the North Coast region to the Sacramento River region through USBR's Clear Creek Tunnel. Lake Sonoma is operated to provide flood control and instream flows in the Lower Russian River in Sonoma County. An intrabasin water transfer system owned and operated by PG&E known as the Potter Valley Project has been in existence since 1908 and diverts water from the upper reaches of the Eel River at Cape Horn Dam through a tunnel to the East Fork Russian River upstream from Lake Mendocino (see "Potter Valley Project" under "Project Operations" section). The water stored behind Coyote Dam (Lake Mendocino, built in 1958) provides water to meet instream flows, agriculture, recreation, hydropower and water supply in Mendocino County and in Sonoma County, particularly upstream of the Russian River confluence with Dry Creek. ~~is used to meet instream flow requirements and urban and agricultural needs in the lower Russian River watershed and the Santa Rosa area.~~

- 14 Page NC-31, lines 32-35: The following update is provided:

The North Coast Regional Water Management Group, now known as the North Coast Resource Partnership (NCRPNCRWWMG) provides the framework for regional cooperation and collaboration to determine the optimal strategies to ensure that surface water supply is able to meet environmental and human-related beneficial uses during both surplus and drought water years.

- 15 Pages NC-32, line 18: Without more information or a definition of terms, we do not know whether it is appropriate to characterize the referenced irrigation wells as "small".
- 16 Page NC-33, lines 34-36. SCWA is unable to review or confirm the information in this section because we do not know the source of the data, assumptions or definition of groundwater used.

- 17 Page NC-34, lines 29-33: We recommend the following edit to reflect additional reclaimed water users:

Reclaimed Water 29

The City of Santa Rosa, the City of Arcata, ~~and the Town of Windsor,~~ and the City of Rohnert Park are using reclaimed water for landscape irrigation and holding tanks for fire suppression. On a regional scale, the North Coast RWQCB's Basin Plan recommends recycling portions of urban and agricultural water to help meet water demands for quality and supply.

- 18 Page NC-35, lines 16-22: We recommend the following edit to more accurately describe:

Imported / Exported Water

The North Coast region does not import water, but water transfers do occur within the region. For example, Eel River water is diverted at the Van Arsdale Dam into the East Fork of the Russian River (via PG&E's Potter Valley Project). The North Coast generally exports more water to other regions than the volume of water consumed within the region for agricultural and urban uses. Two out-of-region transfers include the CVP's TRD and wholesale water sales into the northern part of the San Francisco Bay Hydrologic Region via SCWA's transmission system and the NMWD transmission system Area (Petaluma Aqueduct). See "Project Operations" section of this document for additional information.

- 19 Page NC-39, lines 13-19: Because there is no reference for the source of the figures in the text and no definitions of terms used, such as "local imports", SCWA staff cannot confirm if these figures or the text are accurate.
- 20 Page NC-39, line 29 through Page NC-41, line 29: We recommend the following edits to this section to correctly describe project operations, particularly with respect to SCWA's transmission system. The current text regarding SCWA's system is inaccurate. Please note, the cities of Petaluma and Novato and the Marin Municipal and North Marin Water Districts are in the San Francisco Bay Region, so references to their water use, if necessary, would be more appropriate in that chapter. For additional information about water use by all of SCWA's contractors, including information regarding the reliability of the SCWA water supply and transmission system, please see the SCWA 2010 UWMP, cited above.

Project Operations

Potter Valley Project

The northern edge of Potter Valley in Lake County separates the Russian River watershed from the Eel River watershed, and in the year 1900 it was an ideal place to build a hydroelectric power plant. The Potter Valley Project was first licensed as a hydroelectric power plant in 1922 by the Federal Power Commission. The current license expires on April 14, 2022. See "Potter Valley Project FERC License" under "Water Governance" in this report. Annual flows in the Eel River are quite variable. In the relatively dry year of 2009, the peak flow in the beginning of March— as measured passing Cape Horn Dam at gage E-11 (downstream of the diversion)— for one day was over 5,000 cubic feet per second, quickly dropping to approximately 1,000 cfs and then back to the winter steady state of around 150 cfs before the next major rain. Peak winter flows can occasionally exceed 100,000 cfs. These winter storm events are captured and stored behind Scott Dam (Lake Pillsbury) for later use. Per a 2006 bathymetric survey, the maximum storage in Lake Pillsbury is 74,993 acre feet. From spring until fall, on an average rainfall year, approximately 125 cfs is diverted through the Potter Valley Project

into the Russian River watershed. (Potter Valley Irrigation District 2010). This water is used by the Potter Valley Irrigation District and a portion of it flows downstream into Lake Mendocino.

Coyote Valley Dam and Lake Mendocino

Lake Mendocino is located on the East Fork of the Russian River (downstream of the Potter Valley Project hydroelectric facility), about 5 miles northeast of Ukiah in Mendocino County. The Coyote Dam (also known as Coyote Valley Dam) project was authorized by the Flood Control Act of 1944 and completed in 1958 for purposes of flood control, water supply, recreation, and streamflow regulation. Lake Mendocino has a flood storage capacity of 122,400 af and a total surface area of 1,822 acres. The lake has an un-gated spillway, designed for a maximum release of 35,800 cfs. Major facilities include an anadromous endangered/protected fish species egg collection and imprinting facility, visitor cultural center complex, park headquarters, ~~sponsor~~ City of Ukiah run electrical power plant (hydropower), developed campgrounds (300 sites), 18 primitive boat-in/hike-in campsites, a trail system, 2 boat launch ramps, swim beach, and picnic areas. Of the park's 5,110 acres, 689 are devoted to wildlife management (U.S. Army Corps of Engineers, Coyote Valley Dam 2010).

Warm Springs Dam and Lake Sonoma

Warm Springs Dam and Lake Sonoma is located on Dry Creek in Sonoma County, approximately 14 miles above the confluence with the Russian River. The project is located on 15,966 acres of land, situated approximately 14 miles northwest of Healdsburg. Warm Springs Dam forms Lake Sonoma, which has a design capacity of 381,000 af and drains an area of approximately 130 square miles, or about 9 percent of the total Russian River basin. Construction started in 1967 and was completed in 1982. The dam is operated and maintained by USACE. The storage space for water conservation is owned by the Sonoma County Water Agency (SCWA), while the remaining part of the project is owned by USACE, which directs flood control releases from Warm Springs Dam.

The Don Clause Fish Hatchery (Warm Springs Fish Hatchery) is located on Dry Creek at the base of Warm Springs Dam. This facility is operated by California Fish and Wildlife (DFW, formerly Department of Fish and Game) under a cooperative agreement with USACE. The hatchery was created as part of the Warm Springs Dam Project to compensate for loss of spawning and rearing habitat that was impounded and made inaccessible to anadromous fish by the dam.

SCWA owns and operates the Warm Springs Dam hydroelectric facility. The hydroelectric facility was completed in December 1988. SCWA operates the facility under a 50-year license issued by the Federal Energy Regulatory Commission (FERC) on December 18, 1984. The 3,000-kilowatt Francis turbine generators have a power rating of 2.6 megawatt (U.S. Army Corps of Engineers, Warm Springs Dam 2010).

SCWA Transmission System

SCWA diverts water from the Russian River and delivers it to its customers through a transmission system. SCWA's diversion facilities extract Russian River underflow through six radial collector wells at production facilities adjacent to the Russian River. Two collector wells were constructed in the late 1950s and the next three between 1975 and 1983. The sixth was completed in 2006. SCWA also operates the Russian River Well Field consisting of seven vertical wells, maintained for standby production and used as primary production facilities as needed. Three of the wells have a direct connection to the transmission system. SCWA's transmission system extends from its Russian River diversion facilities located near Forestville to the Santa Rosa, Petaluma, and Sonoma valleys. The transmission system consists of over 85 miles of pipelines. The major

pipelines that comprise the system are known as the Santa Rosa Aqueduct (built in 1959), the Sonoma Aqueduct (built in 1963), the Petaluma Aqueduct (built in 1962), and the Russian River to Cotati Intertie (built in 1977). SCWA also owns the northern portion of the North Marin Aqueduct that extends from the terminus of the Petaluma Aqueduct to a booster station located near the border of Marin County with Sonoma County. The remainder of the North Marin Aqueduct is owned and maintained by the North Marin Water District, which transfers water to its service area and to Marin Municipal Water District. SCWA costs to operate and maintain system facilities are paid by SCWA's main customers, the cities of Santa Rosa, Petaluma, Rohnert Park, Cotati, and Sonoma, the Town of Windsor and the Valley of the Moon and North Marin Water Districts. The Marin Municipal Water District also contracts for SCWA transmission system water.

Petaluma Aqueduct

~~SCWA owns and maintains a series of underground pipes that run from water collectors at Wohler Bridge near Forestville on the Russian River to northern Marin County: the Petaluma Aqueduct serves the greater Santa Rosa area, the City of Petaluma, and North Marin Water District. (See "North Marin Aqueduct" subsection below.) In 1960, Petaluma leaders signed an agreement to receive water from SCWA. The Petaluma Aqueduct was completed in December 1961. As a contractor of SCWA, Petaluma agrees to purchase water at guaranteed rates while SCWA handles the two-county distribution system.~~

~~The Petaluma Aqueduct carries more than 90 percent of the water used by the City of Petaluma, over 8 mgd. Unfortunately, the underground structure is 50 years old, has exceeded its predicted lifespan, and could rupture during an earthquake. While the Petaluma Aqueduct itself warrants monitoring and study, Petaluma is only one user on an 85-mile system of water transmission lines. With Petaluma at the south end of the system, any breakdown along the conveyance affects everyone downstream. SCWA staff recalled times over the years when the water agency had to shut down its system. By implementing conservation measures and using water held in storage, Petaluma was able to manage the temporary loss of its primary supply. During times of supply curtailment, SCWA has 2- or 3-day supply in storage along the aqueduct, and the City of Petaluma has a couple of days of storage and groundwater wells.~~

~~Typically, Petaluma's own source of municipal water only comprises 2 percent of the city's water use, but in recent drought years, local wells were run more often and made up 10 percent of the city's average water use (Petaluma 360 2012). Like most Sonoma County cities, Petaluma drew its own water from municipal wells for decades. According to DWR, the original water source for the community was the headwaters of Adobe Creek.~~

North Marin Aqueduct

~~The North Marin Aqueduct is an extension of the Petaluma Aqueduct to supply water to North Marin Water District and Marin Municipal Water District for the city of Novato and surrounding communities.~~

~~Russian River water, which provides about 80 percent of Novato's water demand, originates in Mendocino County from both the Eel River and the Russian River watershed. Eel River water flows from the Potter Valley Project diversion on the Eel River to the east fork of the Russian River. Then, downstream at a point about 10 miles upstream of Guerneville, near Forestville, water is collected by five Ranney water collectors. This water is then pumped directly into the Petaluma Aqueduct system to supply treatable water for potable use to a two-county area.~~

~~Stafford Lake, which provides approximately 20 percent of Novato's water demand, lies 4 miles west of downtown Novato and collects runoff from 8.3 square miles of watershed property located upstream at 25 the upper tributary reaches of Novato Creek.~~

~~Since 2007, the Deer Island Recycled Water Facility near Novato, located adjacent to Highway 37, has produced treated recycled water supplies to offset Russian River water and help improve Novato's water supply for large landscape and fire protection (North Marin Water District 2013a, 2013b).~~

- 21 Page NC-56, lines 9-16: We recommend the following edits for accuracy:

Flood Hazard Exposure

Historically, in the North Coast Hydrologic Region, flooding originates principally from melting of the Coastal Ranges snowpack and from rainfall. Flooding from snowmelt typically occurs in the spring and has a lengthy runoff period. Flooding from rainfall occurs in the winter and early spring, ~~particularly~~ generally when ~~storms large bands of arriving from the Gulf of Alaska draw~~ moisture-laden air arrive from the tropics. ~~This~~ These ~~systems~~ are ~~pattern~~ is known as an Atmospheric Rivers. This pattern also creates coastal storms that drive waves resulting in coastal flooding and erosion. Offshore earthquakes have caused tsunamis along the coast in the hydrologic region.

- 22 Page NC-57, lines 29-37: We recommend the following edits:

Levee and Channel System

The North Coast Hydrologic Region has four major flood management reservoirs— Lake Mendocino on the East Fork Russian River, Lake Sonoma on Dry Creek, Spring Lake off Santa Rosa Creek, and Matanzas Creek Reservoir on Matanzas Creek; two smaller flood management reservoirs on Paulin Creek and Middle Fork Brush Creek; and seven other reservoirs providing nondedicated flood-retention space. Other flood management projects include levees in the Eel River delta, levees and channel modifications on East Weaver Creek, Redwood Creek, the Klamath River, and the Mad River, and channel modifications on streams running through Santa Rosa Creek, Rohnert Park, Cotati, and Windsor. Measures to mitigate the effects of tsunamis were part of Humboldt Harbor improvements, the Crescent City project, and Crescent City Harbor improvements.

- 23 Page NC-58, lines 28-30: We do not know to what the term “federal water boundaries” refers, in the context of the Redwood Valley District in Mendocino.
- 24 Page NC-60, lines 11-50: We propose the following edits to more accurately describe the Potter Valley Project and FERC license:

Potter Valley Project FERC License

The Potter Valley Project was first licensed as a hydroelectric power plant in 1922 by the Federal Power Commission. The original 50 year license expired in 1972. From 1972 until 1982, the project was operated with a license that was granted annually while discussions regarding the operation were undertaken by PG&E, FERC, Fishery agencies, and stakeholders. In 1978 a final environmental impact statement (EIS) was issued by FERC. Several years of discussion ensued until, in 1983, the project was relicensed for 50 years (from the original expiration date of 1972). The 1983 settlement agreement was signed by PG&E, DFW, and the counties of Humboldt, Mendocino and Sonoma, SCWA and the Mendocino County Russian River Flood Control and Water Conservation Improvement District. Part of the new license was Article 39 which requireds a 10-year study be

undertaken to determine what the new project flows impact was on salmon and steelhead and to adjust them accordingly.

A Fisheries Review Group (FRG) was formed which consisted of scientists from PG&E, USFWS, DFW and the NMFS. In March of 1998, after following the 10 years of studies, the FRG completed their findings and a report was filed with FERC recommending flow modifications. FERC began its EIS process. Over the next year, two other entities, including the Round Valley Indian Tribes (RVIT) and SCWA, submitted proposals to FERC for minimum flow releases. FERC held public scoping meetings and many organizations, municipalities, water districts, environmental groups, and governmental agencies joined as interveners in the process. A draft EIS was completed by FERC in February 1999. After further public meetings, many comments, additional proposed alternatives, and new modeling inputs; FERC issued its final EIS in May 2000.

The FERC recommendation was based predominately on the FRG proposal prepared by the scientists with the most history and knowledge of salmon and steelhead populations specifically in the section of the main stem of the Eel River impacted by the project. The resulting complex flow regimes were calculated in such a way as to make the project nearly invisible to the environment by releasing flows below Cape Horn Dam to mimic natural flows as closely as possible.

After a lengthy Section 7 Consultation between NMFS, PG&E and FERC, under the Endangered Species Act, NMFS produced a BO and Reasonable and Prudent Alternative (RPA) for the project flows and submitted it to FERC in November 2002. The NMFS RPA generated extensive discussion between the agencies and stakeholders that had been involved in the license amendment proceedings since 1983. Ultimately, FERC issued a Final Order Amending the License for the Project January 28, 2004. The project license expires April 14, 2022 (Potter Valley Irrigation District c2012).

Between 1922 and 1983, PVP diversions averaged 154,000 acre-feet per year. Between 1983 and 2006, diversions averaged approximately 131,000 acre-feet per year. In 2006, however, PG&E concluded that its amended FERC license did not authorize that level of diversions and between 2007 and 2013 diversions have averaged 70,000 acre-feet per year.

25 Page NC-62, lines 3-14: The following edits are recommended for accuracy:

Groundwater Management Assessment

Figure NC-21 shows the location and distribution of the GWMPs within the North Coast Hydrologic Region based on a GWMP inventory developed through a joint DWR/Association of California Water Agencies (ACWA) online survey and follow-up communication by DWR in 2011-2012. Table NC-18 furnishes a list of the same. GWMPs prepared in accordance with the 1992 AB 3030 legislation, as well as those prepared with the additional required components listed in the 2002 SB 1938 legislation are shown. Information associated with the GWMP assessment is based on data that was readily available or received through August 2012. Requirements associated with the 2011 AB 359 (Huffman) legislation, related to groundwater recharge mapping and reporting, did not take effect until January 2013 and are not included in the current GWMP assessment. Sonoma County is split between the North Coast and San Francisco hydrologic regions. The GWMP for the Sonoma Valley Groundwater Basin ~~County Water Agency~~ is presented in the regional report of the San Francisco Hydrologic Region. SCWA has convened a Basin Advisory Panel to develop a GWMP for the Santa Rosa Plain Groundwater basin. Adoption of the GWMP is expected in mid-2014.

- 26 Page NC-63, lines 31-32: The following edits are recommended for completeness:

As of August 2012, none of the eight basins identified as medium priority under the CASGEM Basin Prioritization (see Table NC-3) were covered by an active GWMP. However, stakeholders have been meeting since December 2011 to develop a GWMP for the Santa Rosa Plain Watershed, which includes the medium priority Santa Rosa Plain sub-basin.

- 27 Page NC-68, lines 3-20: We recommend the following revisions for accuracy:

Potter Valley Project

The Russian River Basin began receiving Eel River water through the Potter Valley Project in 1908 (<http://www.pottervalleywater.org/history.html>) and with several modifications was diverting 154 taf /yr into the basin at its peak. Communities grew up based upon the available supply in the augmented river system. However, with the FERC license amendments ~~relicensing and some lawsuits~~, the diversion has been cut ~~15~~ percent to 130.9 taf /yr. Between 1922-1983, the diversion averaged approximately 154 taf/yr; between 1983 -2006, the diversions averaged approximately 131 taf/yr; and between 2007 -2013, the diversion has averaged approximately 70 taf/yr.

Communities like Redwood Valley County Water District (RVCWD), are in an almost annual summertime water shortage condition. In addition to diversion changes for the Potter Valley Project, 2007 through 2010 were low water years. RVCWD gathered most of the attention, but several small community service districts and county water districts began having severe water supply problems. The loss of supply also affected the reliability of SCWA to meet its demands, which affected supplies into the San Francisco Bay Region.

~~Sonoma-Petaluma Aqueduct~~ SCWA Transmission System

In the most southern part of the region, a smaller export of roughly ~~33,000~~ 25,000 af /yr is transported from the lower Russian River system into the northern portion of the San Francisco Bay Region through ~~the Sonoma-Petaluma Aqueduct-SCWA's transmission system~~, to supply communities in northern Marin County and southern Sonoma County. For more information on ~~the Petaluma Aqueduct~~SCWA's transmission system, see section on "Project Operations," "~~Petaluma Aqueduct~~SCWA Transmission System" within this document.

- 28 Page NC-68, line 38 through Page NC-69, line 7: We recommend the following revisions to update and more completely reflect SCWA's regional planning and management activities:

Sonoma County is the southernmost county in the North Coast Hydrologic Region, and water planning is closely associated with those of the adjoining San Francisco Bay region. Water planning is strongly focused on meeting the urban needs of Santa Rosa and the surrounding communities served by SCWA while balancing the needs of the environment, fisheries and recreation. ~~The agency SCWA coordinates with and is a member of several North Coast and San Francisco Bay area regional planning groups, including such as the Bay Area Water Agencies Coalition that provides significant direction and guidance for regional planning.~~ Much of Sonoma County regional planning also focuses on the competing uses of the Russian River, which is the largest river in this part of the North Coast region. ~~The Russian River Action Plan has been updated by SCWA, as a coordinated effort among federal, State, and local agencies to protect and restore salmonid fishery populations and habitat.~~

29 Page NC-69, lines 9-17: We recommend the following updates:

In the North Coast region, NCRWVG was formed to coordinate planning within the region. The ~~NCRWVG group~~, now known as the North Coast Resource Partnership (NCRP), is a consortium of counties working together on water management planning and project prioritization and implementation for the North Coast region. Currently the member counties of the ~~NCRWVG~~ NCRP are responsible for implementation of the NCIRWMP, with individual project proponents responsible for project implementation. More information about the authorizing resolutions for the existing institutional structure can be found at: http://www.northcoastirwmp.net/docManager/1000006298/NCIRWMP_Phase_I_2007.pdf "Authorizing Documentation and Eligible Applicant Documentation".

You can read more about how the counties participate in the North Coast ~~Regional Water Management Group~~ Resource Partnership at the same website. Some counties have expressed reservations about joining any collaborative planning effort that might conflict with their local authority. Please refer to Figure NC-23 for integrated regional management planning areas in the North Coast Region.

30 Page NC-74, line 2 through Page NC-75, line 22: The USACE is not currently funding the Russian River Watershed Council and the evaluation and ranking of the watershed discussed in this section is not ongoing at this time. See: [http://www.spn.usace.army.mil/Missions/ProjectsandPrograms/ProjectsAZ/RussianRiverEcosystemRestoration\(I\).aspx](http://www.spn.usace.army.mil/Missions/ProjectsandPrograms/ProjectsAZ/RussianRiverEcosystemRestoration(I).aspx)

In addition, the referenced SCWA action plan is outdated and both USACE and SCWA restoration activities are focused on implementing the Russian River Biological Opinion, discussed above in the General Comments. These Russian River Biological Opinion-related restoration activities are extensive. The following revisions provide updated information.

Russian River

The Russian River watershed encompasses 1,485 square miles (approx. 950,000 acres) within Sonoma and Mendocino counties. Multiple restoration efforts are taking place or are planned in the Russian River watershed, primarily centered on tributaries of the Russian River. One key restoration effort is a result of the Russian River Biological Opinion (issued in 2008 by National Marine Fisheries Service). The Russian River Biological Opinion requires SCWA and USACE to provide improved habitat and refugia in Dry Creek for young coho salmon and steelhead trout. While the cold, clean water in Dry Creek is ideal for salmon and steelhead, the water velocity is often too fast for young fish to thrive. The Russian River Biological Opinion requires that six miles of habitat be constructed in the 14-mile long creek. The first mile of enhancements, which includes logs, boulders and thousands of native plants, is currently underway and must be complete by 2014. The second and third miles of habitat enhancement must be complete by 2017, with the final three miles constructed by 2023. More information regarding the Russian River Biological Opinion, including relevant documents and implementation status, including the most recent Russian River Biological Opinion Status and Data Report can be found at: <http://www.scwa.ca.gov/rrifr/>

~~The USACE Russian River Ecosystem Restoration study will look at opportunities to prevent or reduce flood damages, to restore riverine ecosystem values and the wise use of floodplains, to restore watershed functions through restorative land-use practices, and to conserve remaining hydrologic and ecological resources. The result of Phase I was the formation of the Russian River Watershed Council with the mission to protect, restore, and enhance the biological health of the Russian River and its watershed through a community-based process by facilitating communication and collaboration among all interested parties. The Plan of Action for Phase II (POA) articulates critical issues and potential actions and can be found at Web site: http://www.krisweb.com/biblio/russian_scwa_scwa_2002_actionplan.pdf. Phase II will include the completion of a Russian River Watershed Adaptive Management Plan (WAMP). The WAMP Synthesis Report was completed to provide the watershed community with a catalog of existing data and a ranking of over 1,800 watershed areas in the Russian River watershed.~~

~~• 2009 accomplishments: Completion of the WAMP Synthesis Report, Task 1. The USACE collaborated with Mendocino County RCD to incorporate Synthesis Report into Task 2, the Draft Russian River Watershed Adaptive Management Plan.~~

~~• 2010 accomplishments: With additional funding, continue work on the Draft Russian River WAMP and begin work on the Implementation Plan, and the Monitoring Plan.~~

31 Page NC-75, lines 12-16: We recommend the following addition to the text:

But a deeper look at the wetlands reveals a long list of ecological imbalances that portend a darker future. The need for enhancing the laguna becomes clearer when the historical record is examined— most notably the record of the land's great fertility and its former abundance of wildlife and diversity of plant life. The disconnection of upstream watershed processes has result in a large increase in the amount of sediment reaching and settling out in the laguna. This increased sediment load has resulted in significant change to the laguna. When compared to today's remaining, simpler, less-diverse, plant and animal communities, the contrast is sharp.

32 Page NC-77, line 29 through Page NC-78, line 3: We recommend the following edit because this information is discussed in other sections of the report and there is no ongoing litigation:

The Eel River and its tributaries are the largest river system draining to the coast of Humboldt County, and it is characterized by significant water quality problems during winter storm events due to massive sediment loads from unstable soils. The Eel River is also host to Humboldt County's largest fisheries of salmon and steelhead, which depend on access to upstream tributaries for spawning. The only major water storage in the upper reaches of the Eel River is the Potter Valley Project, which consists of Lake Pillsbury and a downstream diversion dam and tunnel to the Russian River (Mendocino County). The project was originally built in 1908 by Snow Mountain Water and Power Company. Lake Pillsbury was constructed in 1922 for hydropower production, and the project was acquired by Pacific Gas and Electric Company in 1930. The history of this project and recent FERC license amendment is discussed at pages NC-39-40.

~~In recent years, fishery interest groups have argued that the amount of water diverted to the Russian River has adversely affected salmon and steelhead in the Eel River. The water needs of the Eel River fishery have been~~

~~evaluated and disputed during the recent FERC hydropower license amendment proceeding of the Potter Valley Project. In June 2004, FERC approved PG&E's relicense amendment of the Potter Valley Project and its associated water diversions to the Russian River. However, fishery groups are litigating the FERC decision, so the future distribution of project water between the Eel and Russian rivers is not yet resolved.~~

Table NC -4 Groundwater Level Monitoring Wells by Monitoring Entity in the North Coast Hydrologic Region. The number of wells listed for Sonoma County PRMD should be 75, not 14.

Table NC-8 North Coast Hydrologic Region Average Annual Groundwater Supply by Planning Area (PA) and by Type of Use (2005-2010) and Table NC-9 North Coast Hydrologic Region Average Annual Groundwater Supply by County and by Type of Use (2005-2010): We cannot review or confirm the information regarding the Russian River Planning Area and Sonoma Hydrologic Region without knowing the data source because, without that, it is not clear how the information was derived and what is considered to be "groundwater".

Table NC-11 North Coast Hydrologic Water Balance Summary, 2001-2010. Because the reports do not describe the methodology or assumptions from which the water balance figures were derived, and the relevant appendices are not yet available, SCWA is unable to confirm or correct such numbers.

Table NC-16 North Coast Hydrologic Region Water Management Agencies. This table lists some public agencies as private companies and some private companies as public agencies.

Figure NC-8 Monitoring Well Location by Agency, Monitoring Cooperator, and CASGEM Monitoring Entity in the North Coast Hydrologic Region: A number of wells are missing and Agency staff is working with DWR staff to provide updated information.

San Francisco Bay Hydrologic Region Report

33 SFB 9 Line 21-SFB 10, Line 20: We recommend that the discussion of floods and precipitation include a discussion of Atmospheric Rivers and their increased frequency as a result of climate change.

34 Page SFB 13, lines 30-31: See SCWA's General Comments, above, for information about the SCWA Transmission. We suggest the following edit for accuracy:

Additional deliveries are made from the SWP's South Bay Aqueduct (SBA) and North Bay Aqueduct (NBA); the CVP's Contra Costa Canal, Putah South Canal, and San Felipe Unit; and Sonoma County Water Agency's (SCWA) transmission system, which imports water from the Russian River watershed~~Sonoma and Petaluma aqueducts.~~

35 Page SFB 25, lines 2-13: We recommend edits for accuracy and completeness as shown:

Hydrograph 04N05W02B001M (Figure SFB-15-C) is from a domestic well located in the southern Sonoma Valley Subbasin, a predominantly agricultural area. The hydrograph illustrates the effect of in-lieu recharge on declining groundwater levels and the associated response when recycled water supplies were made available to the area around 1996. Groundwater levels prior to 1990 were generally stable at around 5 feet above mean

sea level, however, dropped to approximately 120 feet below mean sea level by 1996 due to pumping for agricultural irrigation. The drop in groundwater level created a depression zone in southern~~near the City of Sonoma Valley~~ which increased the potential for ~~caused~~ saline water to migrate northward into the subbasin. In the mid-1990s, the ~~SCWA and the City of Sonoma~~ Sonoma Valley County Sanitation District ~~initiated a saltwater intrusion control program and~~ made recycled water available for irrigation, which offset the need for groundwater pumping for irrigation and allowed groundwater levels to recover. Between 1996 and 1998, groundwater levels recovered 120 feet and have been above mean sea level for more than 10 years. SCWA prepared a Groundwater Management Plan for the Sonoma Valley in 2007 and is proactively pursuing a portfolio of water projects to ensure the sustainability of surface water and groundwater resources in Sonoma Valley.

Figure SFB-10 San Francisco Bay Hydrologic Region Inflows and Outflows in 2010. See figure below.

Please do not hesitate to contact me if you have any questions or comments at Don Seymour at 547-1925 or Donald.Seymour@scwa.ca.gov.

Sincerely,

A handwritten signature in black ink that reads "Don Seymour". The signature is written in a cursive, flowing style.

Donald Seymour
W.A. Principal Engineer

Russian River Watershed and Sonoma County Water Agency Transmission System

